

**California Environmental Protection Agency  
Department of Toxic Substances Control  
Green Chemistry Initiative Science Advisory Panel  
March 4, 2008 Meeting  
Conference Call**

***Meeting Notes***

Meeting Participants

- |                        |                         |
|------------------------|-------------------------|
| ▪ Dr. Paul Anastas     | ▪ Dr. Pete Myers        |
| ▪ Dr. Nicholas Ashford | ▪ Dr. Mary O'Brien      |
| ▪ Dr. John Balmes      | ▪ Dr. John Warner       |
| ▪ Dr. William Carroll  | ▪ Dr. Michael Wilson    |
| ▪ Dr. Gail Charnley    | ▪ Dr. Katy Wolf         |
| ▪ Dr. Richard Denison  |                         |
| ▪ Dr. Daryl Ditz       | ▪ Kathy Barwick, DTSC   |
| ▪ Dr. Michael Dourson  | ▪ Jeff Wong, DTSC       |
| ▪ Dr. Ken Geiser       | ▪ Emerson - facilitator |
| ▪ Dr. Lynn Goldman     |                         |
| ▪ Dr. Vistasp Karbhari |                         |

Meeting Objectives

- Approve 2/11/08 SAP conference call notes
- Listen to subcommittee progress reports
- Evaluate progress to date
- Plan for SF meeting
- Confirm SAP path forward and next steps

Welcome and Introductions

- Dr. Warner welcomed participants and reviewed the agenda.
- Roll call was taken.
- Today's meeting agenda was reviewed; no revisions were made.
- Emerson reviewed the ground rules for today's meeting.

Review and Approval of February 11, 2008 Meeting Notes

- Meeting notes from the February 11, 2008 SAP meeting were reviewed. No changes were requested. After a motion to approve the February 11, 2008 meeting notes, and a second, the meeting notes for 2/11/08 were approved.

## Subcommittee Reports

Subcommittees delivered brief reports on their activities to date.

- Subcommittee on Data Needs and Availability (Subcommittee 1): Dr. Bill Carroll reported for the group:
  - Reiterated SC1's request to other subcommittees regarding data needs, and noted that the request and template are on the SAP's web work space. The other subcommittees were requested to send the information directly to Drs. Carroll and Denison.
  - Held internal discussions on data and information needs and availability, including data for answering specific questions.
- Advancing Green Chemistry and Engineering Through Alternatives Assessment (Subcommittee 2). Dr. Mike Dourson reported for the group.
  - Increased mutual understanding within the subcommittee.
  - Looking at the two proposed structures and trying to work into those frameworks the various examples of alternatives assessment, with the purpose of better understanding the examples and how they fit in to the structures.
  - The subcommittee had not yet envisioned a report.
  - Noted that a lot of the current green chemistry-related activities are focusing on information generation and dissemination, with less on capacity-building, which is important for the consideration of incentives and barriers related to the advancement of green chemistry.
  - Has generated a lot of materials, including examples.
- Advancing Green Chemistry Through Evaluation of Incentives and Barriers (SC3): Dr. Daryl Ditz reported for the group.
  - Subcommittee 3 continues to develop a sampling of potential policy options. Sixteen options have been developed to date.
  - The group is applying the proposed structures to the work done to date, and looking at the kinds of interventions (regulatory, voluntary, etc.) to identify any overall patterns. The process has revealed that some part of the structures show lots of ideas, where in other places there are gaps.
- Advancing Green Chemistry Through Education and Information Dissemination (Subcommittee 4). Dr. Ken Geiser reported for the group.
  - Subcommittee 4 has had four meetings to date. They are preparing a report divided into two sections:
    - education (including K-12, undergraduate, and graduate education), including integrating green chemistry into other disciplines, as well as free-standing green chemistry programs
    - information dissemination, on three tracks:
      - a web portal, as an access point for information on green chemistry;
      - state technical assistance components; and
      - awards and recognition programs.
  - There was further general discussion about the possible addition of the term "green engineering" to the "green chemistry" focus of this subcommittee and SAP's work, including:

- The need to consider nonchemical solutions
- The possible misinterpretation of “green engineering” to include secondary/tertiary treatment and other engineering controls
- A possible unintended consequence that “green chemistry” may be interpreted to only include chemistry
- A reported tendency for those using the “green engineering” term to not focus enough on the reduction of inherent hazard
- The need for clarity in the terms used by the SAP
- Noting that the SAP’s work has included discussions of green engineering
- There should be a glossary of terms in the SAP’s final report
- Request to add this to the SF meeting agenda

The end result of the discussion was to place this issue in the “parking lot” for future consideration.

- Advancing Green Chemistry Through Science and Technology (Subcommittee 5). Dr. Paul Anastas reported for the group.
  - Looking at the nature of the final report
  - Compilation of a set of recommendations
  - Some of the discussion is occurring in small groups and one-on-one discussions, including:
    - How to best provide funding for research
    - Identify the major research & development challenges
    - How to leverage existing funding and approaches
    - Developing and fostering university/industry partnerships
    - Collaborations between universities and national laboratories
    - Recognition of scientific accomplishments
    - Tools, including instrumentation, computational tools
  - Some overlap with other subcommittee topics (especially SC4)
- Synthesis Subcommittee (Subcommittee 6):  
Dr. Warner reported for the “synthesis committee.”
  - Subcommittee 6 is working on how to synthesize the final product from the SAP. Guided by the two framework documents.
  - Proposing sample Tables of Contents to describe the final report, as a guiding principle. A final proposal will go to the SAP for the March meeting in San Francisco.
  - The final report will include a glossary
  - It was noted that both proposed organizational structures, or frameworks, are being used by the subcommittees to organize their work. Some are making modifications to the frameworks to increase their utility. A request for suggestions for further modifications was made.
  - A SAP member asked whether DTSC’s implementation of Phase 2 of the Green Chemistry Initiative continues to use the same organizational approach (categories). DTSC staff responded with yes, current work is based on the Phase 1 structure and the options report. The stakeholder meetings scheduled for Phase 2 are designed to get a better characterizations of the options (who, what, when,

- how). Staff will then perform a comparative analysis of options. The chapter headings in the Green Chemistry Options Report are still being used as an organizing principle. Teams within Cal/EPA and other relevant state agencies are being assembled for developing implementation plans for early action items.
- It was noted that many recommendations under discussion call for actions outside of DTSC's capability; there was a suggestion that the SAP provide a briefing or presentation to the Green Chemistry Leadership Council.

### Path Forward

Staff reviewed the schedule for SAP activities. There was discussion about the nature of the two-day meeting in San Francisco scheduled for March 25-26, 2008.

There was a suggestion to make sure the web space postings are complete.

There was a request for a brief instruction email from Drs. Warner & Balmes delineating what materials should be posted.

There was a request for a general email to everyone regarding access to the SAP web space.

### Next meeting

The next SAP meeting will be in San Francisco, California on March 25-26, 2008. There was discussion about the nature of the work to be done at that meeting, including a request for the Synthesis Subcommittee to meet very soon and provide clarity and guidance to the other subcommittees.

There was a reminder to the subcommittees to provide a response to Subcommittee 1's request for input on data needs.

### Parking Lot

A SAP member requested that the following issue be placed on the "parking lot" for resolution at a future time: Regarding the motivation for performing alternative assessments: what process/procedure at the front end warrants an alternatives assessment?

Add "green engineering"

### Adjournment

The meeting was adjourned at 11 am PST.